suffering from madura foot disease, was admitted to the dispensary on the 5th October last. The patient says that twelve years since, a swelling appeared under the arch of his foot, and caused him considerable pain. In six years several openings in the tumour showed themselves, through which black particles (*kala dana*, to use the man's own words) commenced to fall out. Two years afterwards a village barber cut down through the sinuses, and removed a quantity of the *kala dana*, dressing the wounds afterwards with lime. This treatment was not, however, effectual, as after it the foot remained enlarged and painful, and in a short time matters became as before. During the last four years the enlargement has not increased much, but pain has been persistent, though not acute. He could not bear pressure on the tumour, nor could he walk.

The portion of skin affected was about 2½ inches in length by 1½ in width, swollen and hardened. The openings of numerous sinuses were visible, and in most of them were a few of the black grains, moistened by a serous oozing. There was no general enlargement of the foot, nor was any change discernible in the appearance, size, or shape of the dorsum. The disease was limited to the soft skin under the arch of the foot and the underlying parts. Round the orifice of each sinus the skin appeared slightly thickened.

On removal of the affected tissues, it was seen that from the external openings separate canals ran upwards into the deeper structure. These were filled with black granular matter mixed with a serous fluid. The tissues surrounding these sinuses were disorganised, the plantar fascia had disappeared, and the muscles were much changed in appearance. A probe failed to reach the bones; the disease did not seem to have reached there. Each sinus had its own lining membrane, which prevented a general diffusion of the disease product, which was altogether of the black granular description. The supply of blood to the parts was very small, hardly any bleeding vessel being seen after the incisions.

CASE III.—A man, aged 27, admitted on October 12th. He has suffered from 'Kirinagra,' he says, for twelve months, and it commenced after a prick from a thorn. The disease was seen in the sole of the right foot under the arch. There was a general fulness of the part affected, but little hardness. Numerous leaden coloured spots were seen in the skin, in appearance like grains of shot under the horny epidermis. There was one small opening, but there were no black grains in it, and none had ever been discharged. The diseased skin was removed the same day. No black particles or other sign of disease were visible below the subcutaneous cellular tissue and fat. The plantar fascia was exposed at the bottom of the wound, and was unchanged in structure, and very yellow in colour. The parts were very vascular, and there was much bleeding.

CASE IV.—A patient came to me some eighteen months ago, suffering from madura foot disease located in the left leg between the knee and the ankle, the part chiefly implicated was the upper third of the leg, and the disorganisation ran so close to the knee as to preclude the possibility of an amputation through the knee joint, of which I had at first thought. All the common signs of the disease in its advanced stage were remarked; there were the thickening and infiltration of the skin, obliteration and metamorphosis of muscles and tendons, and numerous sinuses containing the dark-coloured granular matter. These sinuses led down to the bones in several places, and had a leaden-coloured lining membrane. Both bones were affected, though unequally. The tibia had merely a groove on its external surface, a couple of inches below the tubercle, and in this lay a quantity of the black gritty matter. The fibula was more extensively affected about an inch below the head, the shaft had been expanded and hollowed out as if by a myeloid tumour. The cavity contained a large quantity of the black grit mixed with thick serum. There were no septa nor spiculæ of bone in this cavity. Immediately below the shaft of the bone was eaten away, leaving but a narrow rounded neck. This was succeeded by an enlargement of the shaft, from the front of which a large concave depression had been worn away. The entire length of the shaft affected was from 4½ to 5 inches. The head of the fibula with its cartilage was in its normal condition, and so was the head of the tibia and its articulating surface. Externally the disease had run much higher up, the skin covering the head of the fibula and part of that covering the patella and its ligament having been involved.

The leg was removed by amputation through the lower third of the thigh, and a good recovery followed.

It will be remarked that in the first three of the cases given above, the part affected was the same in all. It would seem that the soft skin under the arch of the foot is a very favorite location for this disease. The slow advance of the lesion is well exemplified in the cases, where, after a duration respectively of four and twelve years, the disease had not affected the bones of the foot.

JODHPUR, *October 16th*, 1874.

A MIRROR OF HOSPITAL PRACTICE.

MEDICAL COLLEGE HOSPITAL.

SECOND SURGEON'S WARDS,

Under the care of DR. K. MCLEOD, *from notes by Assistant Surgeon* JOGENDRO NATH GHOSE.

No. I.—COMPOUND DISLOCATION OF ANKLE JOINT AND COMPOUND FRACTURE OF TARSUS: EXCISION: RECOVERY.

KOYLASH, aged 40, resident of Pundooah, admitted 21st May 1874. Patient had fallen from a branch of a mango tree on to the ground about noon of the day of admission. On his arrival at the hospital, the injuries discovered were, lacerated wound on the outside of the right ankle joint, dislocation of the astragalus, which hung outside of the wound, and compound comminuted fracture of the os calcis, scaphoid and cuboid. There was also simple fracture of the left radius about 3 inches from its lower end, a bruise round the left eye, and an abrasion of the forehead on the left side. Patient was semi-conscious, and in a state which seemed to be a compound of concussion and shock.

He was seen on admission by Surgeon E. Lawrie, M.B, Resident Surgeon, who found both anterior and posterior tibial arteries uninjured, the vitality of the foot unimpaired, laceration and bruising moderate. It was accordingly determined to make an effort to save the limb. The wound was enlarged transversely, the astragalus removed, the lower end of the tibia and fibula turned out, and about half an inch of their articular ends sawn off, three arteries were secured by catgut ligatures, the cavity was carefully syringed out with chloride of zinc lotion, and after the lips of the wound had been brought together by catgut sutures it was sealed antiseptically. The fracture of the radius was set, and ♏ xx. of liq. morphiæ injected hypodermically. Beef-tea and brandy were ordered to be administered occasionally.

The patient underwent some febrile reaction, but by no means of a very severe type. He remained in a semi-conscious state with occasional delirium during the remainder of the month. His left eyelid and conjunctiva became ecchymosed. The wound was found to have undergone putrefaction on the 24th, and some sloughing of its margins had taken place. From this date its cavity was stuffed with cotton wool soaked in carbolic oil, and on each occasion of dressing it was carefully syringed out with chloride of zinc lotion. A saline diaphoretic mixture was administered frequently, quinine and iron given thrice daily, and a chloral draught at night.

On the 26th a large piece of os calcis which had become detached was removed by forceps. The remainder of the bone came away on a subsequent occasion, and, at intervals, numerous bits of bone—parts apparently of the scaphoid and cuboid—

were removed. The cavity and edges of the wound became in time clean, granulating surfaces, the former contracted and eventually resulted in a sinus which emited healthy pus. Meantime he fully regained consciousness and sense, his fever subsided, and he gained strength and weight, the radius united firmly, and the ecchymosis of the eye and brow subsided without leaving any damage behind. On the 23rd of August a secondary abscess formed on the inside of the instep, which was opened and found to lead to bare bone. The sinus resulting therefrom healed in a few weeks.

On the 8th of September he had a rigor, succeeded by high fever. His foot and leg became erysipelatous, inguinal glands swollen, a thin puriform discharge flowed abundantly from the sinus, and an abscess formed over the instep. These events ensued in consequence of accidental overcrowding of the wards, and several other patients manifested on the same day similar symptoms. The ward was partially emptied, and the epidemic subsided. Patient was treated with quinine, iron, and chlorate of potash, the abscess was laid open and lead lotion applied to the swollen leg and glands. The fever and swelling subsided, discharge diminished in quantity, and sinuses contracted. Another abscess formed on the 17th of September on the front of the leg, and was opened, the original sinus was enlarged and drained with India-rubber tubing. Since then the parts have undergone steady improvement, and now (20th November) the orifices have quite closed up. The patient can support the weight of his body on the affected limb, which is about 1½ inch shorter than the other. He can walk fairly well with the help of crutches, and is learning to do without them. He has a joint at the site of the ankle joint which admits of some flexion and extension He can flex and extend the toes, and there is no pain on manipulating the foot or striking the heel

REMARKS.—This case illustrates what may be done in the way of conservative surgery in injuries of the ankle joint and tarsus. The patient sustained an extremely severe lesion implicating his ankle joint, calceneo—astragaloid joint and the astragalus, os calcis, cuboid and scaphoid. The astragalus was removed at once. The whole of the os calcis and part of the cuboid and scaphoid had subsequently to be taken away; a thick slice was, moreover, taken off the ends of the tibia and fibula. The patient was not a young man; he had sustained severe concussion, and was for weeks delirious. The parts did not heal kindly; sloughing and necrosis took place. Secondary abscesses and burrowings formed, and he got an attack of erysipelas and consecutive abscesses. Notwithstanding all this, he now possesses a leg useful for support and progression, exhibiting wonderfully little deformity, and furnished with a fairly good substitute for an ankle joint. The case offers much encouragement to the practice of conservative surgery in injuries of the ankle and tarsus if the vitality of the foot and the integrity of its arteries have not been seriously compromised.

CASE II.—COMPOUND COMMINUTED FRACTURE OF LEG; TETANUS: AMPUTATION: DEATH.

Nobo, aged 40, a maid servant, of spare habit, admitted 23rd May 1874. Patient sustained a compound comminuted fracture of her right leg by a bag of castor seed falling upon it from a height of about ten feet. There was a lacerated wound on the inside of her leg at the lower third, through which the very oblique extremity of the upper fragment of the tibia, denuded of periosteum, protruded. About an inch of this was removed, and the bone was reduced. The fibula was comminuted at a higher level. The soft parts were not much lacerated, the tibials were patent, and temperature of the limb normal. The wound was carefully cleaned and dressed antiseptically, and the leg supported by a posterior and two lateral splints. The right shoulder joint was observed to be contused and swollen. It was afterwards discovered that a fracture existed through the anatomical neck, and this was put up in the usual manner. The patient was low and evidently stunned by the shock of the injury. Stimulants and nutrients were ordered. Mild reaction occurred, requiring gentle laxatives and a diaphoretic mixture. Patient was subsequently treated with a saline when feverish and quinine in moderate doses. Up to the 17th of June, within a few days of a month since admission, she continued to do well. The wound looked clean and healthy; the discharges were sweet and not excessive; no œdema appeared; fever entirely subsided, and matters looked hopeful. The patient was carefully nursed and nourished, seemed to assimilate her food well, and appeared tolerably comfortable and well. On the evening of that day symptoms of trismus appeared, which on the following day developed into well-marked tetanic fits. She was treated with 20-grain doses of chloral hydrate repeated every four hours, and opiate applications to the wound. On the 18th she had three fits, on the 19th two, none on the 20th or 21st, on the 22nd two, and none after that. The tetanic state lasted for a few days longer, and she was drowsy and partially insensible.

After the appearance of the tetanus the wound became sloughy, discharge profuse and fœtid, and the extremities of the bones were found to be extensively stripped of periosteum. The local and general conditions gradually deteriorated. The temperatures assumed a high range, seldom falling below 99°. A bed sore formed over the sacrum on the 4th of July. The bowels became loose about the same time, and emaciation was progressive. Efforts were unceasingly made to procure some amendment. The wound was carefully dressed with antiseptic preparations, quinine was regularly administered in tonic doses, the chloral hydrate was continued at bedtime. The bowels were attended to, and nourishing food and stimulants regularly supplied. Patient continued to decline in every respect till the 21st, a month after the appearance of the tetanus, when it was determined to try the effect of removing the local source of irritation by amputating the limb. The patient's condition was extremely unfavorable—temperature ranging high, pulse hardly perceptible at the wrist, and very rapid, bowels loose, tongue glazed, body excessively emaciated, sloughing bed sore on back, and delirium.

The wound had become more sloughy, and grumous pus burrowed in the intermuscular planes up and down the limb, the bones being bare for several inches and bathed in fœtid discharge. Amputation was resorted to as a last hope. Without the elastic band it would have been out of the question; but a bloodless removal of the limb was on consultation considered justifiable. The leg was accordingly removed below the knee. Chloroform was cautiously administered and well borne, and the elastic bandage wound above the knee completely commanded the arteries.

The amputation was performed by anterior and posterior flaps, and the wound was dressed antiseptically. The ends of the bones were found to be extensively necrosed, and the medulla of the lower fragment in a state of purulent infiltration Some attempts at repair were evident around the upper fragment. The tibialis anticus muscle was in a state of disorganization from origin to insertion; no other muscle was similarly affected. The patient rallied well from the operation, and lived till the 30th—nine days. Her progress was, however, continuously downwards, and the removal of the diseased parts seemed to produce no improvement. The interior of the stump became sloughy, the limb above it œdematous, and the edge of the tibia made its way through the anterior flap. The bed sore grew worse; fever, emaciation, and exhaustion increased. A tetanic condition of the muscles supervened, causing contractions of the neck and limbs. Occasional rigors occurred, and the bowels continued relaxed. The plan of treatment above described was pursued without the slightest benefit. Death was finally due to asthenia.

REMARKS.—This case contrasts with the previous one in being an unsuccessful attempt to practise conservative surgery under rather more favorable circumstances than case No. I presented. The case promised well until tetanus supervened. The tetanic condition was apparently subdued by chloral hydrate, but coincidently with the manifestation of the tetanus the wound went wrong. From this point the case proceeded from bad to worse, and though the decline was slow it was fatally sure. The attempt to remedy matters by amputation failed. The patient was almost *in extremis* when the operation was performed; but she survived it nine days. At one time she almost seemed to be rallying; the temperature and pulse improved, and her symptoms seemed less ominous, but the amendment was transitory. The tetanic condition which ushered in the change for the worse clung to her more or less to the last, and was associated with an irritative fever generally, and destructive tissue changes locally. The *post-mortem* examination revealed no secondary deposits or abscesses—only chronic meningeal congestion and effusion and a congested state of the pulmonary and intestinal mucous membranes. The diagnosis of fracture of the anatomical neck of the humerus was confirmed. The injury had undergone repair. The case is an instructive one as illustrating the effect of an amputation performed in very unpromising circumstances, with a view of removing a palpable source of nerve irritation and blood poisoning. The conclusion deducible from the narrative of the case is that the operation did no good and no harm.